

REPLACEMENT SHEET

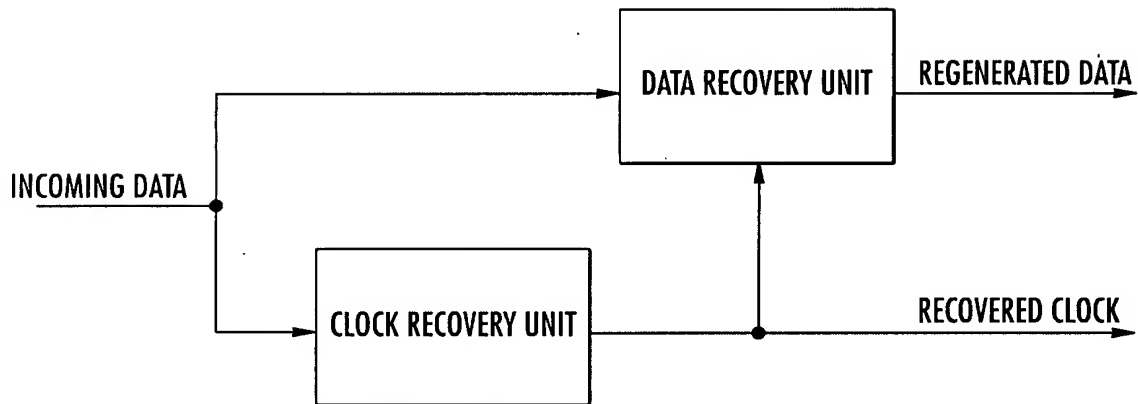
Title: A FEED FORWARD CLOCK AND DATA RECOVERY UNIT

Applicant: Peter Gregorius

Serial No.: 10/810,981

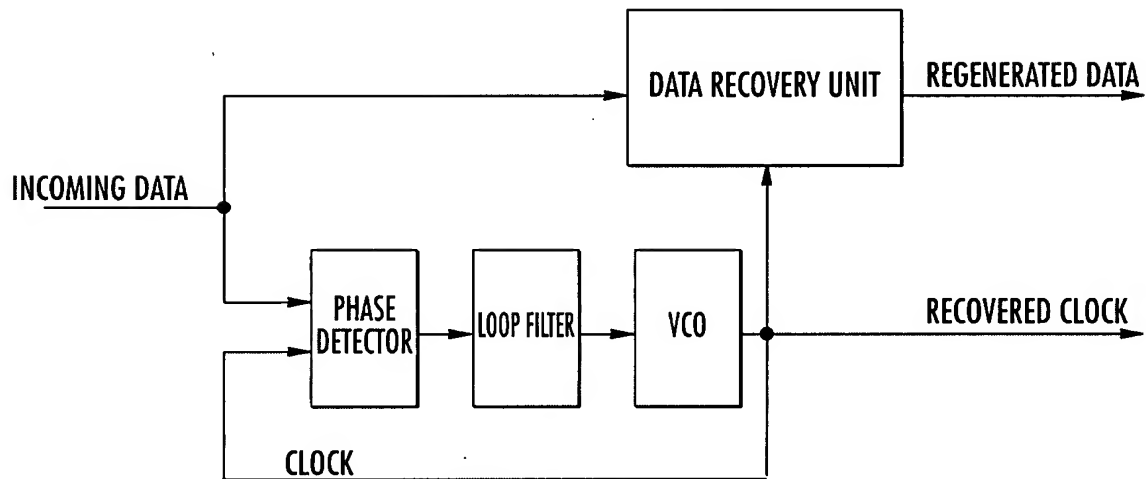
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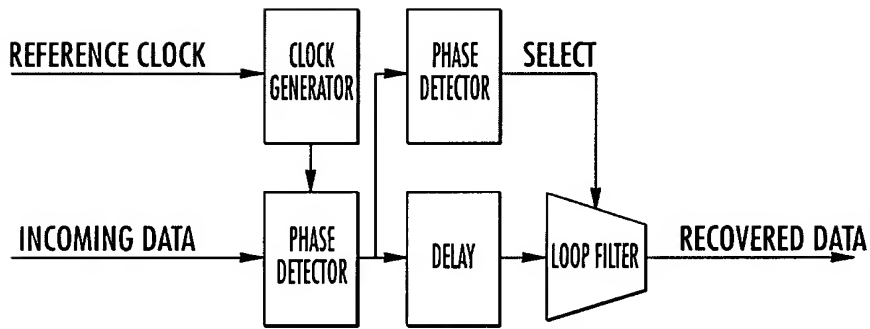
**FIG. 1**  
**(PRIOR ART)**

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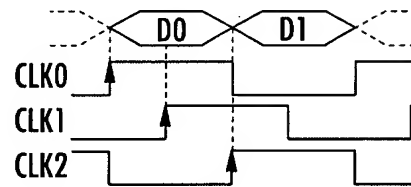


**FIG. 2**  
**(PRIOR ART)**

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**FIG. 3a**



**FIG. 3b**

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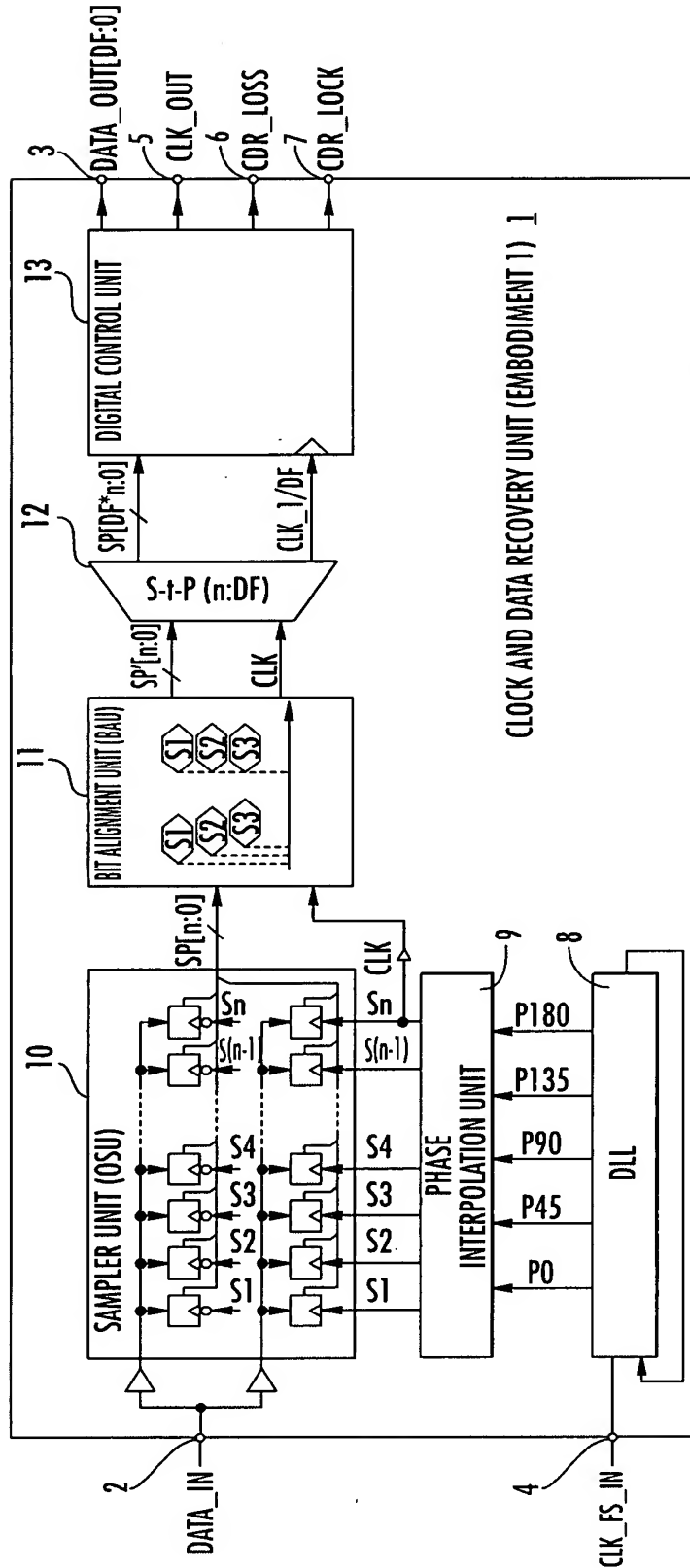


FIG. 4

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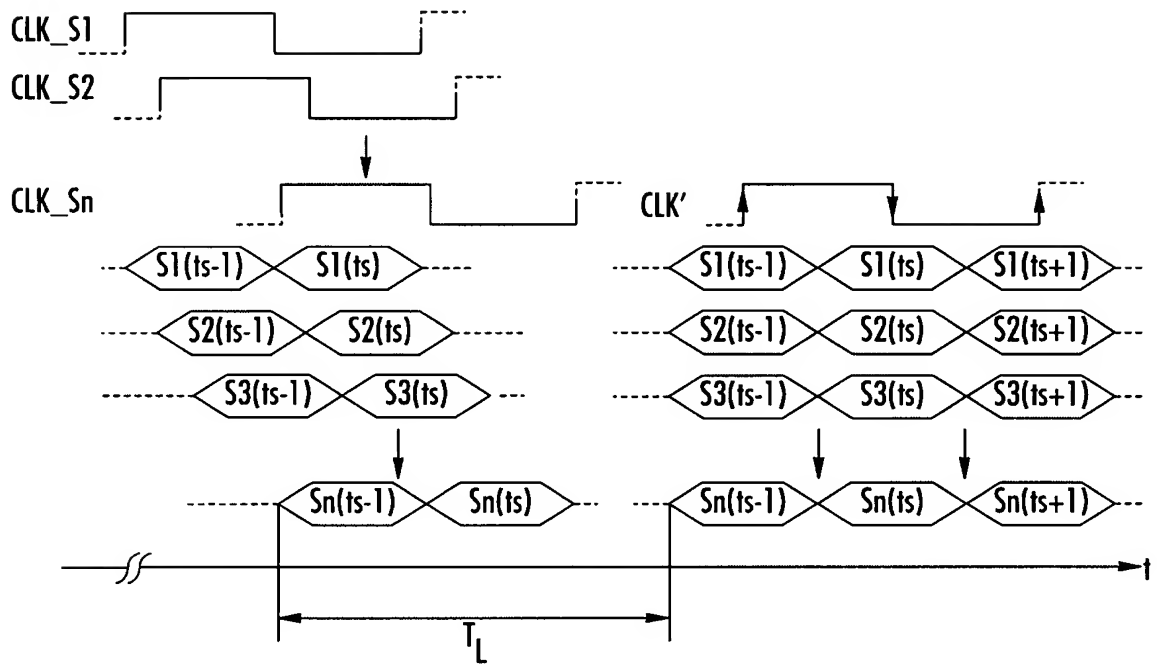


FIG. 5

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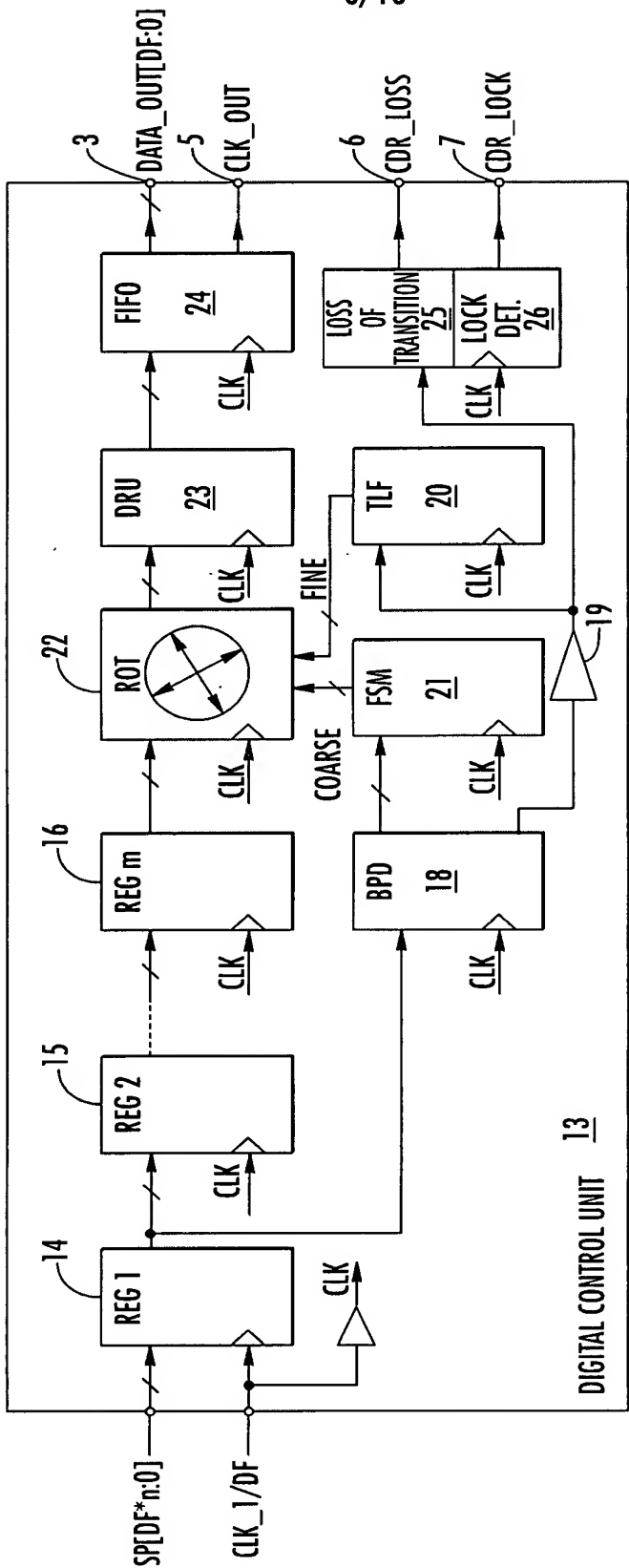


FIG. 6

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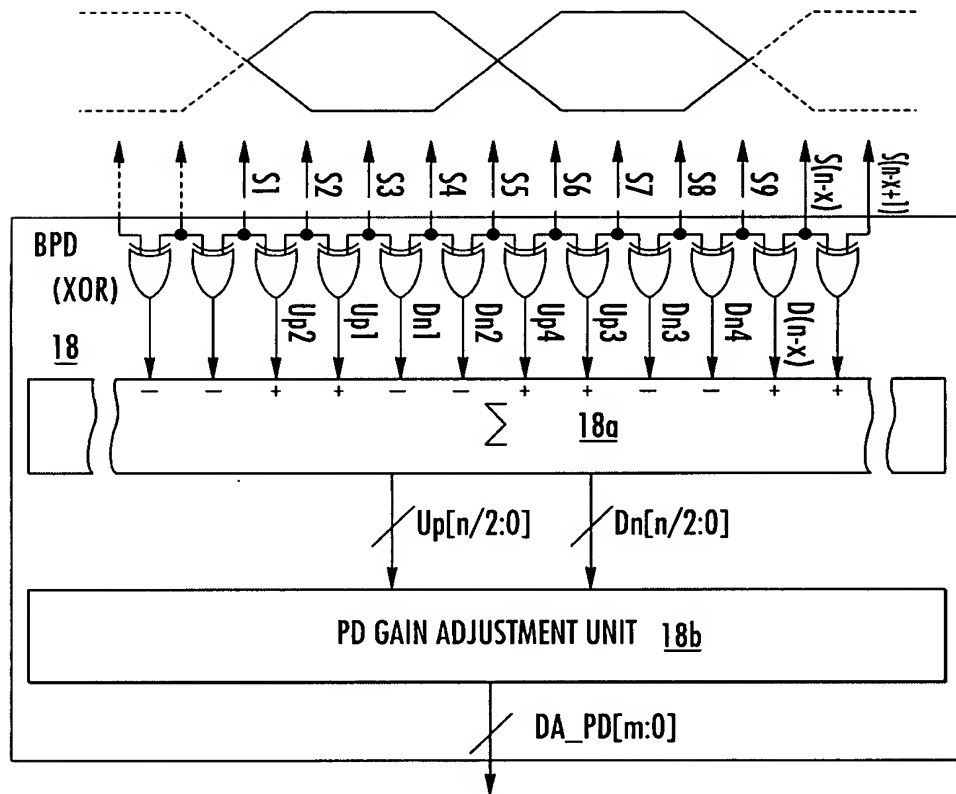


FIG. 7a

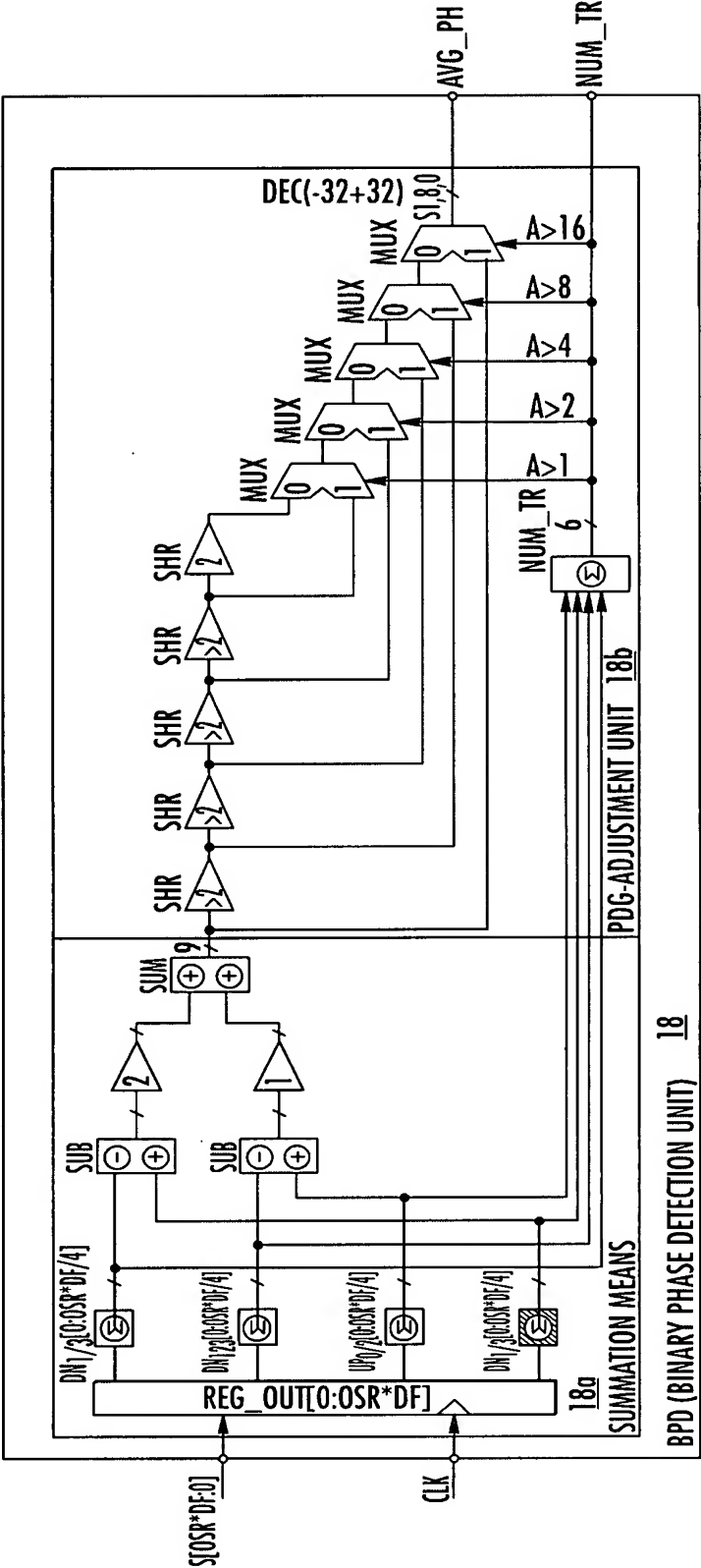


FIG. 7b



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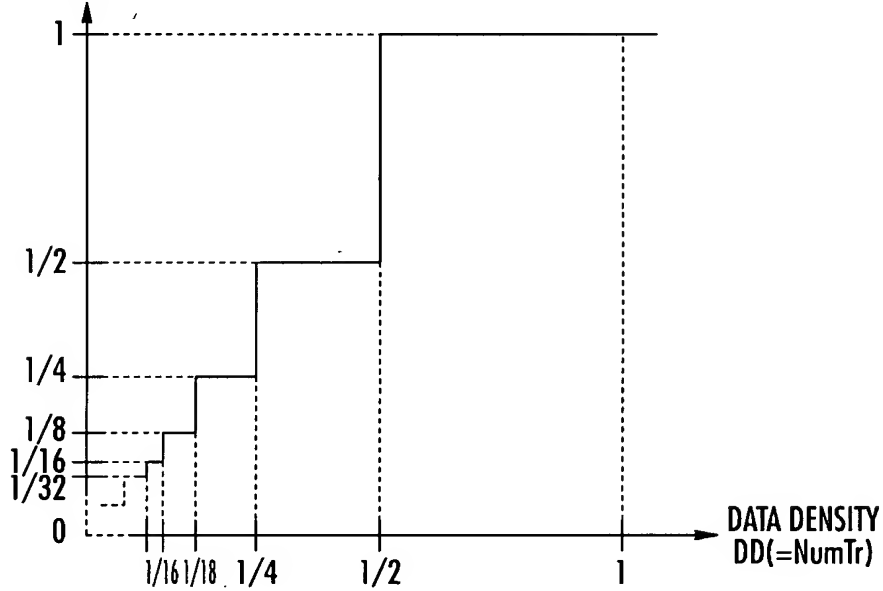
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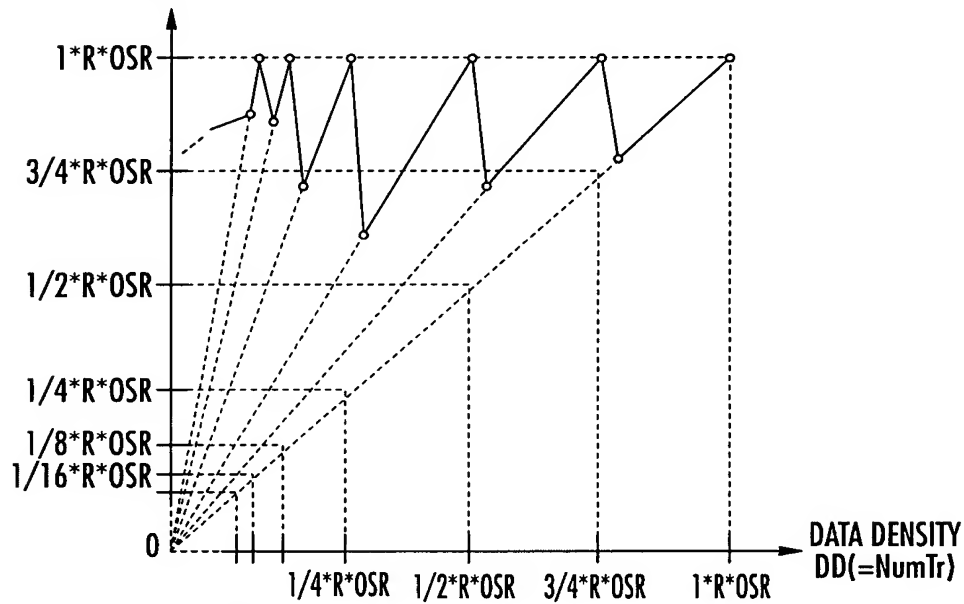
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PHASE DETECTOR GAIN  
GPD



**FIG. 8a**  
(PRIOR ART)

PHASE DETECTOR AIN  
GPD



**FIG. 8b**

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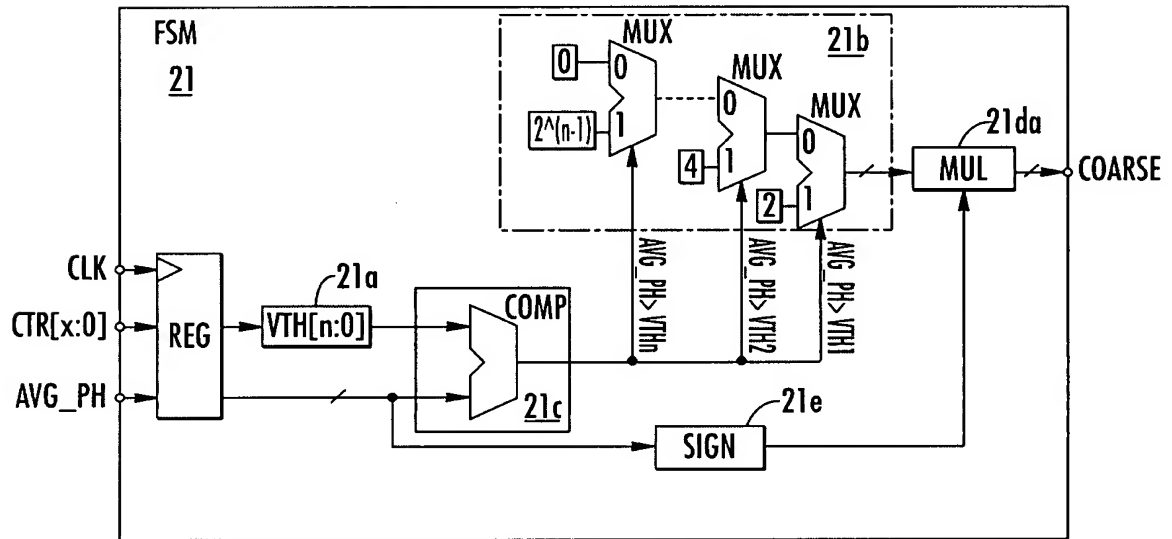
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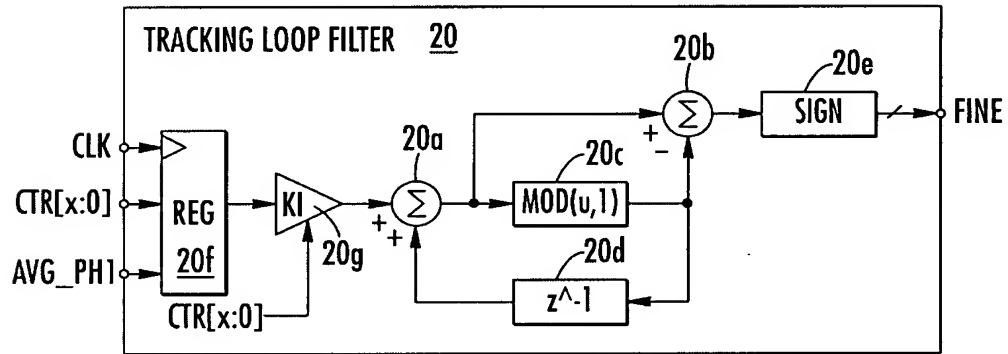


FIG. 10

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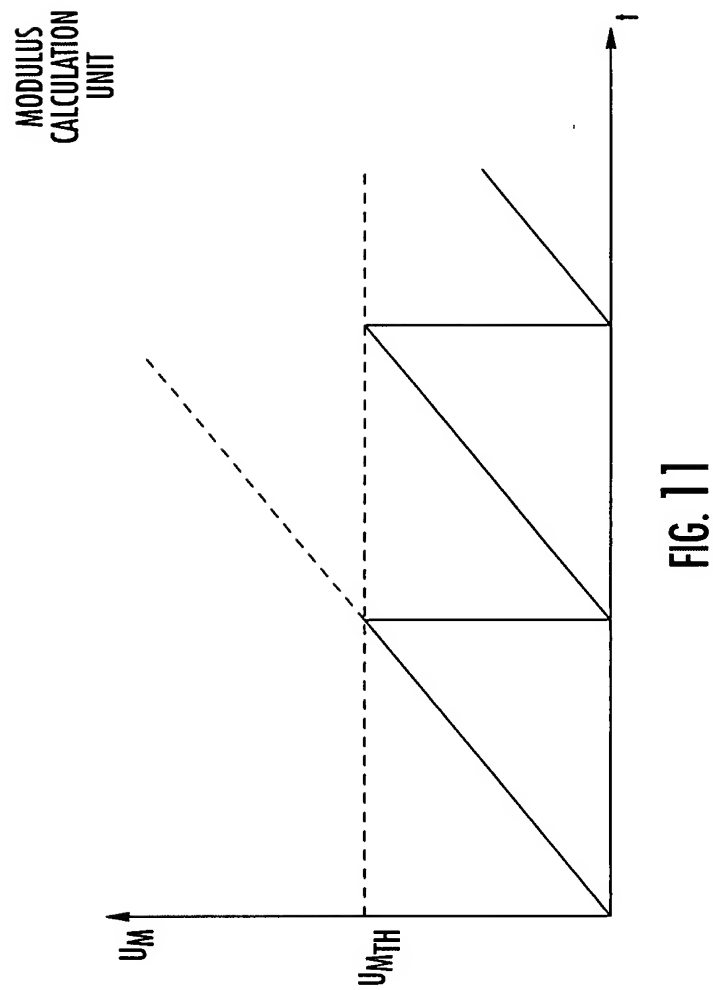
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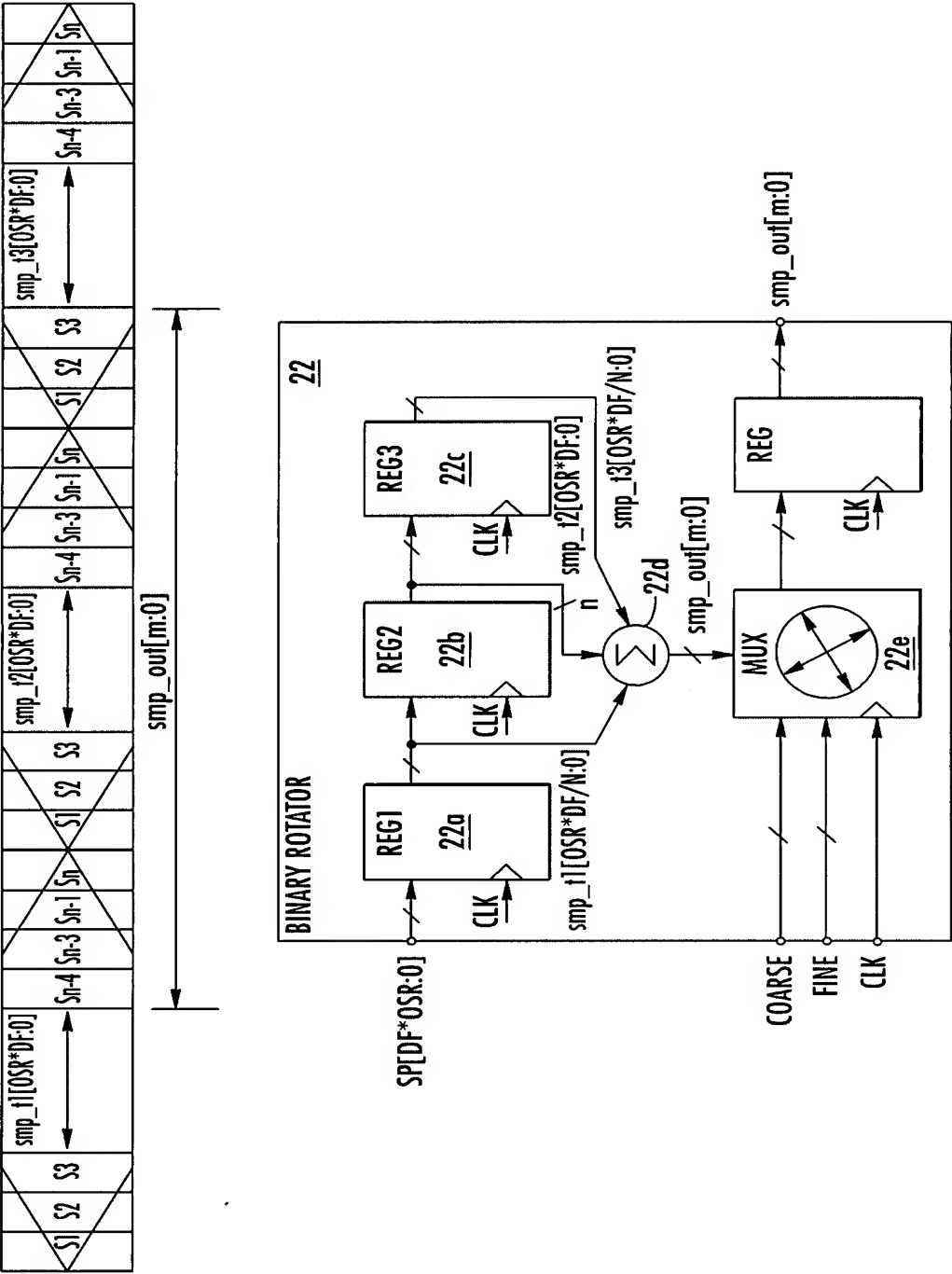


FIG. 12

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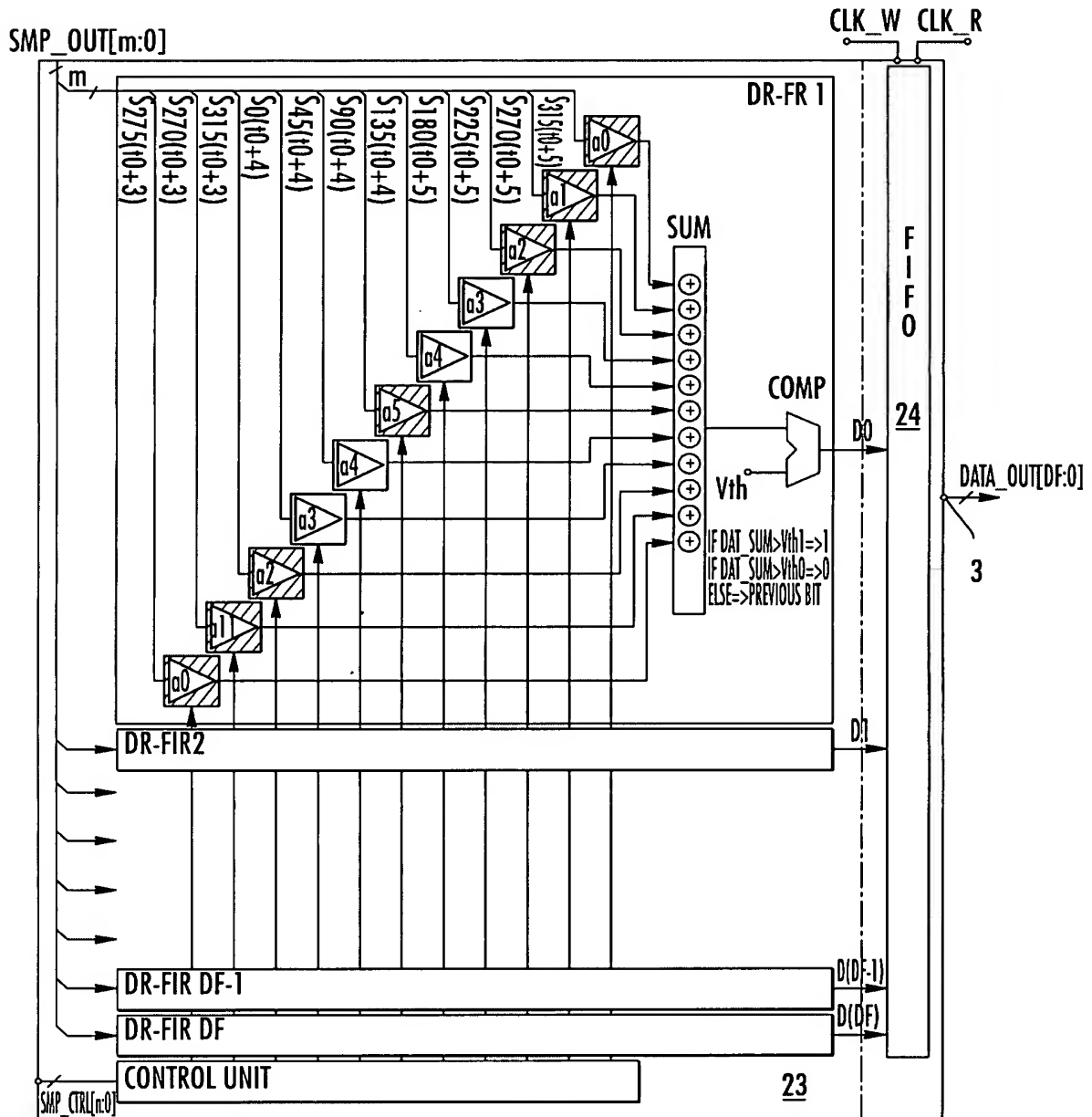


FIG. 13

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FIG. 14

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$$H_{FIR}(z) = a_0 + a_1 \cdot z^{-1} + a_2 \cdot z^{-2} + a_3 \cdot z^{-3} + a_4 \cdot z^{-4} + a_5 \cdot z^{-5} \dots$$

$$g(t) = K \cdot \frac{\sin \omega(t-t_0)}{\pi(t-t_0)}$$

$$K=10$$

$$P_e = g(t=t_s+k)S_k$$

$$K=1$$

TRANSFER FUNCTION

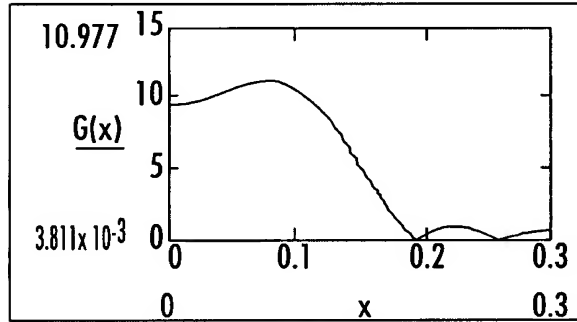


FIG. 15a

IMPULSE RESPONSE

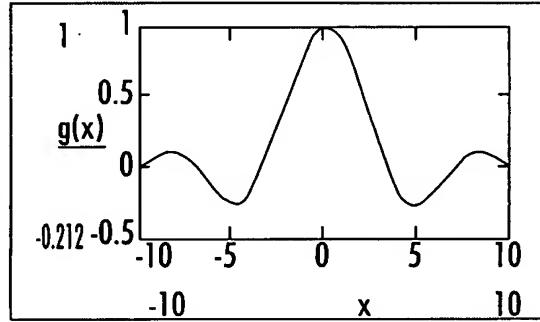


FIG. 15b

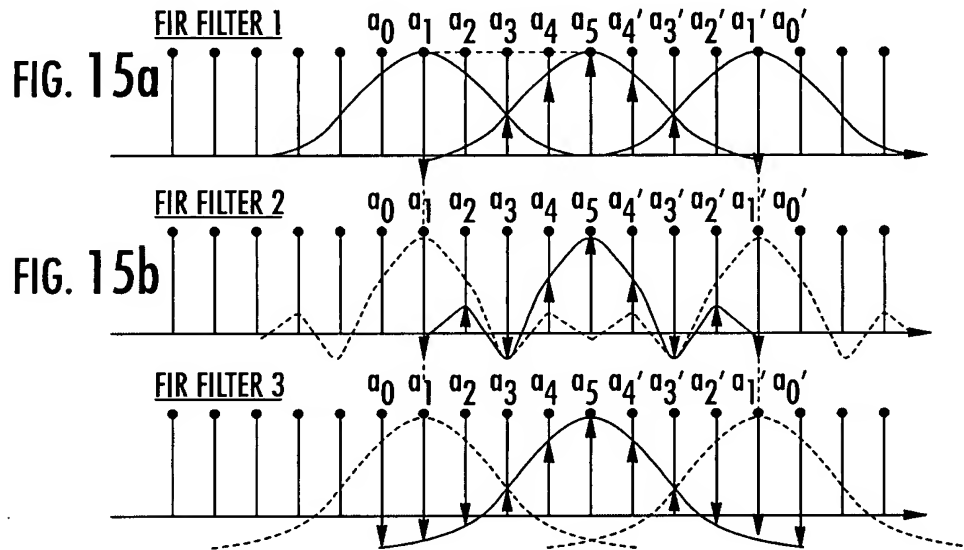


FIG. 15c

FIG. 15

	FILTER COEFFICIENTS		
	FILTER A	FILTER B	FILTER C
$a_0$	0	0	-18
$a_1$	-1	-6	-14
$a_2$	0	8	-8
$a_3$	20	-13	17
$a_4$	50	40	50
$a_5$	64	64	64
$a_4'$	50	40	50
$a_3'$	20	-13	19
$a_2'$	0	8	-6
$a_1'$	-1	-6	-14
$a_0'$	0	0	-18



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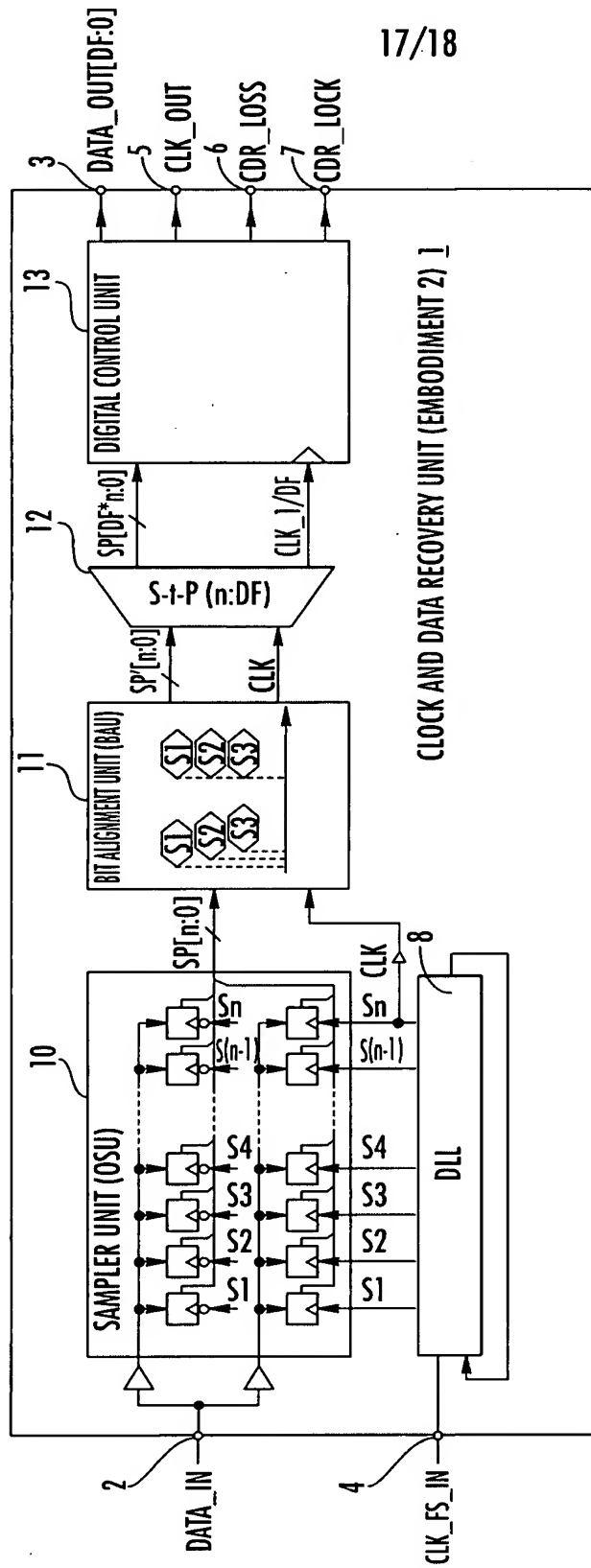


FIG. 16

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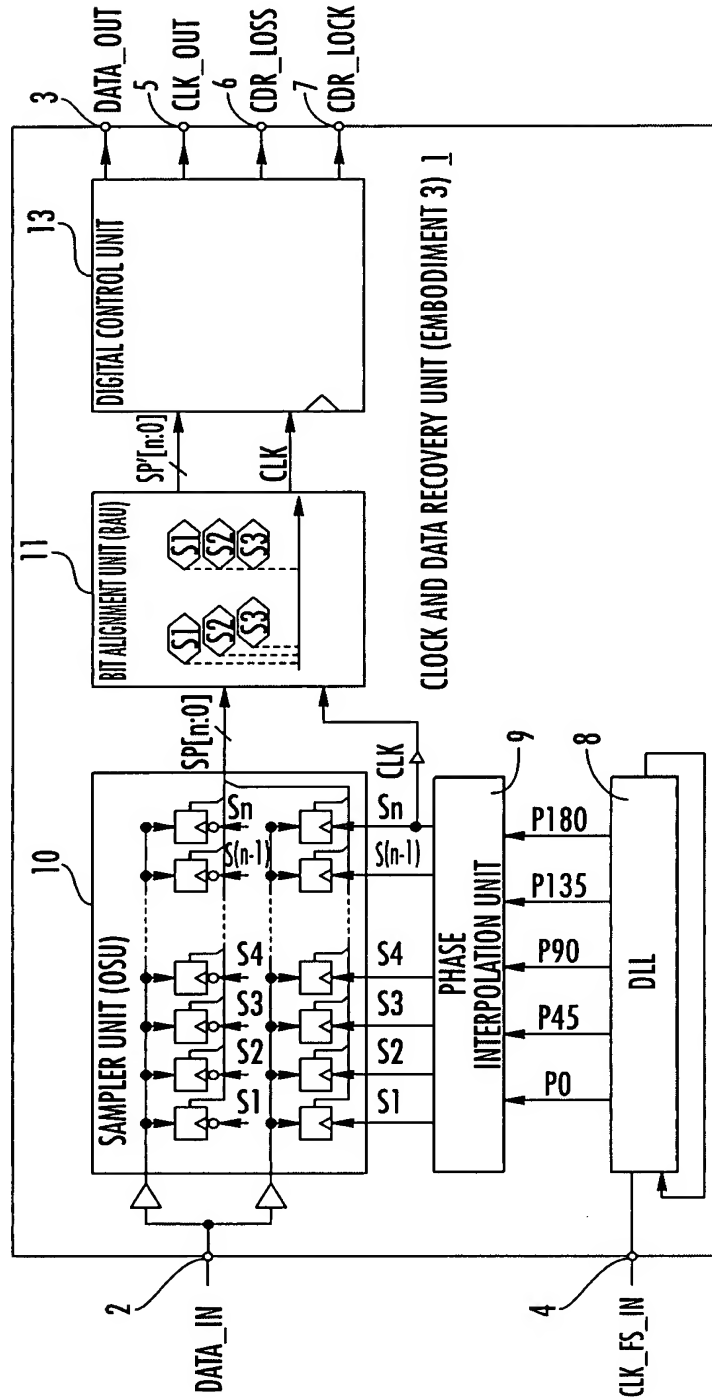


FIG. 17